

We claim:-

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1. A solid mixture of at least one compound from the group consisting of the C₁₄- to C₂₂-alkyldiketenes as reactive size and starch, wherein said mixture is obtainable
5 by mixing at least one compound from the group consisting of the C₁₄- to C₂₂-alkyldiketenes with at least one starch in a melt in the presence of at least one destructuring agent for starch under the action of shear forces at from 65 to 250°C and with cooling of the melt to room temperature.
- 10 2. The solid mixture of a reactive size and starch according to claim 1, wherein the starch used is a cationic starch, and the mixing is carried out in the presence of at least one emulsifier.
- 15 3. The solid mixture of a reactive size and starch according to claim 1 or 2, wherein the mixing of the components is effected in an extruder or kneader.
4. The solid mixture of a reactive size and starch according to any of claims 1 to 3, wherein the mixing of the components is effected continuously in an extruder
20 under the action of ultrasound.
5. A solid mixture of a reactive size and starch, wherein the destructuring agent used is water, an alcohol, urea, dimethylurea and/or a polyalkylene glycol.
- 25 6. The solid mixture of a reactive size and starch according to any of claims 1 to 5, wherein reactive size and starch are used in a weight ratio of from 10 : 1 to 1 : 10.
- 30 7. The solid mixture of a reactive size and starch according to any of claims 1 to 6, wherein the starch is digested during the mixing process by passing steam into the melt.
- 35 8. A process for the preparation of solid mixtures of at least one compound from the group consisting of the C₁₄- to C₂₂-alkyldiketenes as reactive size and starch, wherein at least one compound from the group consisting of the C₁₄- to C₂₂-alkyldiketenes is mixed with at least one starch in a melt in the presence of at least one destructuring agent for starch under the action of shear forces at from 65 to 250°C, and the melt is then cooled to room temperature.
- 40 9. The process as claimed in claim 8, wherein the starch used is a cationic starch, and the two components are mixed in the presence of at least one emulsifier in an extruder while passing superheated steam into the mixing zone of the extruder.

AMENDED SHEET

10. The use of a solid mixture of a reactive size and starch according to any of claims 1 to 7 in the form of an aqueous dispersion as a process assistant in papermaking.
- 5 11. The use according to claim 10, wherein the aqueous dispersion is used for the engine sizing and surface sizing and for the strengthening of paper.